

Dairy Quality and Safety PDG

Names of Attendees: Neil Bogart (Chair), Kara Mikkelson (Vice Chair), Celina To (Secretary), Anna Acosta, Sam Alcaine, Sabina Alexander, John Allan, Ronald Altman, Takiyah Ball, Nate Banner, April Bishop, David Blomquist, Victoria Burgess, Kristin Butler, Catharine Carlin, Erdogan Ceylan, Ada Cowan, Lyndsey Cypriano, Alvaro De Bonis, Alan Deery, Patrick FACH, Zhujun (Abby) Gao, Kathleen Glass, Michele Gorman, Evan Henke, Leslie Hintz, Matt Hudkins, Ingrid Huntley, Jada Jackson, Craig Jewell, Esbal Jimenez, Patrick Kachelmeier, Peter Kennedy, Jeffrey Kornacki, Vijay Krishna, Markus Lacorn, Ingrid Lima, Jermaine Lindsey, Christian Lorenzo, Jeff Lucas, Shikhadri Mahanta, Birata Mainali, Paraskevas Makridis, Yadira Malavez, Ngozi Manukaji, Nicole Martin, Alejandro Mazzotta, Fabiola Miranda, Paola Moncada, Sarah Murphy, Rejoice Nyarku, Amin Omairi Nasser, Chris Paradise, Aaron Pleitner, Christophe QUIRING, Cristina Resendiz-Moctezuma, Samantha Roldan Perez, Victoria Romano, Mansour Samadpour, Allen Sayler, Kristin Schill, Arlette Shazer, Calvin Slaughter, Nakia Smith, Abigail Snyder, Esmeralda Soto-Velez, Michelle Stedman, Manuel Trevino, Rosalia Trias Mansilla, Erica Turley, Jack van der Sanden, Ron Van Santen, Stephen Walker, Benjamin Warren, Dina Weston, Sharon Wilson, Anett Winkler, Ren Yang, Justin Zangl, Bonnie Zhu.

Total Number of Attendees: 79.

Meeting Called to Order: Sunday, July 26, 2026, approximately 8:32 A.M.

Minutes Recording Secretary: Celina To.

Old Business: The 2025 meeting minutes were reviewed. No corrections were recorded. Vijay Krishna made the motion to approve the minutes and David Blomquist seconded the motion. The 2025 meeting minutes were approved as presented.

New Business: The Executive Board reported the highest conference attendance since the COVID-19 pandemic, with more than 80 percent of registrants attending. The organization continues its financial recovery, and members were encouraged to support outreach and membership growth.

Samantha Roldán Pérez provided the Student PDG update. Activities are intended to connect students with professionals in academia, industry, and government; expose students to food safety career paths; and strengthen research presentation and science communication skills. Members were encouraged to participate as invited scientists or competition judges, promote student representatives, and include the Student PDG as a co-sponsor for relevant proposals. Activities included Meet Your Favorite Scientist, the 3-Minute Thesis Competition, Food Safety Flash, Student Spotlight, and student proposal development.

Members were encouraged to use the conference application to identify dairy-related symposia, roundtables, posters, and technical sessions. Sponsored or co-sponsored programming included Salmonella and Cronobacter controls in low-moisture facilities using dairy examples, safe water reuse in dairy and food processing, and advances in microbial quantitation. Dairy-related posters addressed allergen detection, yeast and mold enumeration, STEC detection, antibiotic residues, environmental monitoring, antimicrobial peptides, AI-assisted environmental sampling decisions, and spoilage organisms.

Industry Updates. Abigail Snyder announced an upcoming 1.5-day Advanced Dry Sanitation Forum at Kerry's national headquarters. The industry-centered, consensus-building forum is intended to identify emerging best practices, determine which concepts should move forward, and advance practical dry-sanitation approaches for low-moisture and dry dairy operations.

Clostridium botulinum and Powdered Infant Formula. Kristin Schill of the University of Wisconsin-Madison Food Research Institute presented an update on botulinum neurotoxin-producing Clostridium in powdered infant formula and dry dairy ingredients. The presentation placed recent investigations in the

context of the difficulty of detecting rare spores, differentiating closely related organisms, and interpreting PCR, culture, toxin testing, and whole-genome sequencing results.

- The ByHeart-associated outbreak was declared over by CDC on February 26, 2026, after 48 cases and hospitalizations across 17 states. FDA ingredient sampling identified matching isolates from powdered infant formula, whole milk powder, and clinical cases.
- A separate investigation involved four infant botulism cases associated with consumption of Nara Organics Whole Milk Infant Formula. *C. botulinum* was isolated from an opened container, and the company recalled all lots. Evidence was insufficient to establish the supplier or contamination route.
- In FDA post-response sampling, 46 of 48 powdered milk samples were PCR-negative. Two organic nonfat milk powder samples were PCR-positive and identified by whole-genome sequencing as nearly identical *C. sporogenes* BoNT/B1. The powder had not been used in infant formula and did not match previously reported sequences.
- *C. sporogenes* is a close genetic relative of Group I *C. botulinum*, and some *C. sporogenes* strains can produce botulinum neurotoxin. This complicates taxonomy, organism identification, and interpretation of presumptive findings.
- Because contamination may occur at fractions of a spore per 100 g, small analytical portions can underestimate prevalence. Sample mass, enrichment, most-probable-number approaches, and limitations of pass/fail criteria require further evaluation.
- Potential spore sources include soil, feed, bedding, feces, teat surfaces, milking routines, and sanitation practices. Processing controls such as bacterofugation and microfiltration can reduce spores; however, powdered infant formula manufacturing does not necessarily include a process designed to inactivate all *C. botulinum* spores.

Preliminary survey information was discussed. Among 50 lots representing 29 commercially available dairy-based powdered infant formula brands, 45 lots were below 1 CFU/g by direct plating, four were at 1 CFU/g, and one was at 8 CFU/g. Nine of 50 lots were positive for sulfite-reducing clostridia by direct plating or enrichment. These research-in-progress findings do not establish sulfite-reducing clostridia as a reliable indicator for *C. botulinum*. Key questions include prevalence in nonfat dry milk versus whole milk powder, differences associated with farm practices and organic versus conventional production, the relationship between sulfite-reducing clostridia and *C. botulinum*, and whether direct testing, enrichment, or MPN methods can support meaningful specifications or decision criteria.

International Dairy Federation. Nate Banner, IAFP liaison to the IDF Standing Committee on Food Hygiene, described IDF's role in advocating for the global dairy sector and developing science-based guidance and standards. Founded in 1903, IDF includes 41 member countries representing approximately two-thirds of world milk production and a network of about 1,200 experts. Its participants represent farmers, cooperatives, processors, national dairy organizations, academia, government, suppliers, and the dairy workforce.

- IDF maintains a dynamic program of approximately 150 to 165 work items through standing committees and task forces. These work items may provide concepts for future IAFP symposia and roundtables.
- IDF and ISO have collaborated since 1963 and have published nearly 200 joint standards; approximately 60 are listed in Codex CXS 234. Harmonized methods support comparable results, regulatory confidence, fair trade, and a common technical language.
- Recent work has included analytical matters, allergen labeling, food additives, water reuse, *Listeria monocytogenes*, STEC, heat treatment, antimicrobial agents, microbial food cultures, food safety management, and mycotoxins.
- Members interested in becoming IDF experts were encouraged to contact the US-IDF National Committee, submit a CV and area of expertise, and seek nomination to a standing committee or task force. Participation is also possible through the USDA/ANSI ISO Technical Advisory Group.

IAFP 2027 Proposal Ideation. Participants submitted ideas through Mentimeter and worked in breakout groups to organize concepts for 2027 proposals. Major themes included spoilage, spores, sanitation, environmental monitoring, dry dairy, microbiomes, supply chains, yeast, and networking.

- Spoilage: fungal biofilm analysis and mitigation; environmental monitoring for yeast and mold; metagenomics for root-cause analysis, shelf-life, and fermented products; and challenge studies or shelf-life validation for fluid milk.
- Spores: enumeration and rapid detection of *C. botulinum* spores; prevalence, geographic distribution, transmission routes, and farm practices; root-cause analysis, prevention, reduction, activation, and partitioning; and modeling, risk assessment, dose-response, thermophiles, and data sharing.
- Dry Dairy: allergen-cleaning and dry-sanitation tradeoffs; effective CIP/COP and hygienic equipment design; low-moisture guidance and accepted practices; defining a clean break; and avoiding unnecessary introduction of water.
- Sanitation: humidity control; biofilm prevention; novel chemistry in wet environments; decisions regarding when, where, and how much water to use; integration of quality and sanitation teams, tools, culture, and data; and potential spore harborage in poorly maintained piping and biofilms.

Members were reminded that proposals should be scientifically sound, relevant, clearly written, and distinct from recent programming. Organizers should communicate with the PDG, define the target audience and session format, secure speakers representing diverse perspectives, and provide complete speaker information. The initial deadline shown for 2027 symposium, roundtable, and workshop proposals was September 29, 2026. Stage-two notification was listed for November 20, 2026, and finalized proposals were due January 12, 2027.

Recommendations to the Executive Board: None.

Next Meeting Date: Interim PDG meetings will be held virtually, with details communicated through IAFP Connect. The next listed PDG meeting is Tuesday, August 11, 2026, at 10:00 A.M. Central Time. The IAFP 2027 Annual Meeting will be held July 18-21, 2027, in Kansas City, Missouri.

Meeting Adjourned: David Blomquist moved to adjourn at 10:00 A.M. Central Time and Nicole Martin seconded the motion.

Chairperson Name: Neil Bogart.